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ABSTRACT

Validity data (prediction of first-year grade point average) for colleges participating in the Admissions Testing Program Validity Study Service (VSS) and based on students entering college in 1964 through 1974 are summarized for the following predictors: Scholastic Aptitude Test (SAT)--verbal score, SAT--mathematical score, high school record, and these three predictors combined. No definite trends over time were apparent for SAT validities, although those obtained for 1973 and 1974 were generally among the highest observed. There was a downward trend in the validity of high school record accompanied by a slight downward trend in multiple correlations for all three predictors combined. Median validities for colleges having SAT--verbal means between 450 and 549 tended to be higher than those for colleges having means below 450 or above 550. The great majority of colleges participating in the VSS were found to be four-year colleges. Separate analyses of the small number of two-year colleges in the sample yielded slightly lower median validities for each of the predictors than those found for the total sample. (Author/EVH)

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Summary of Validity Data from the Admissions Testing Program Validity Study Service

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OVERALL SUMMARIES

Selected data from 11 years of Validity Study Service (VSS) reports, 1964-65 to 1974-75, are summarized in this report. These data include validities of Scholastic Aptitude Test verbal (SAT-V) and mathematical (SAT-M) scores, high school record (HSR), and the three predictors combined; means and standard deviations of both SAT scores; and numbers of students in the VSS analyses. High school record means and standard deviations have not been summarized because of the variety of scales used. Analysis of these data reveals that the SAT scores are predicting as well in the more recent years as in the earlier years; however, HSR validity and multiple correlations have declined somewhat over this period of time.

Sample Selection

The source of the validity data is the VSS data base. (Selected data from all available validity studies have been transcribed from printed VSS reports to the data base.) All college records meeting the following selection criteria are included in the summaries:

1. The number of students was at least 50;
2. Student groups included were all freshmen, all SAT takers if an all freshman group was not present, or a general liberal arts group if neither of these groups was present;
3. No more than two entering classes had been combined in a record (combined data were assigned to the earlier year);
4. Years of student entry to college were 1964 through 1974;
5. The criterion was freshman grade-point average (FRGPA);
6. The first three predictors, in any order, were SAT-V, SAT-M, and HSR.

Thirteen records were excluded because of data verification problems.

A coeducational college requesting a validity study may elect to have data analyzed for men and women separately and combined; separately, only; or combined, only. Since validities obtained separately and combined may differ, partly because of varying fields of study chosen by males and females, and since a trend in validities for one sex may not occur for the other, validities have been summarized for males, females, and for the combined sexes. Combined data were not available in the data base for all colleges electing separate male and female analyses. All available combined data have been included in this summary. Data from single sex institutions have been included in the appropriate single sex summaries.

Description of the Sample

Information about selected characteristics of the colleges represented in the 1974-75 summaries was obtained from the College Board Marketing Management File. This descriptive data is reported in Table 1 and includes College Board region in which the colleges are located, type of

college (two-year or four-year, public or private), and percent minority enrollment. The information on percent minority enrollment may be somewhat out of date for some colleges. However, it provides a general idea of the ethnic composition of the colleges included. Information is given only for those colleges having validity data for 1974 entrants to college, since the Marketing Management File contains primarily 1974 data.

Variables Included

SAT-V, SAT-M, HSR, and all three combined are the predictors for which validity information is presented. The criterion in all cases is freshman grade point average (FRGPA) at the college requesting the validity study. The scale for FRGPA was not necessarily the same from college to college.

As mentioned previously, HSR may be reported on several different scales. Some colleges report class standing and class size. These data are then converted to a 20 to 80 high school rank scale. Others may use percentile ranks or inverted percentile ranks or high school grade-point average, which may be reported on a number of different scales. Starting with classes entering college in 1972, colleges were given the option of using student-reported HSR computed from Student Descriptive Questionnaire (SDQ) responses. Either rank on a 20 to 80 scale or average on a 0 to 4 scale was used in the validity study. Table 2 presents the numbers of colleges electing each of the HSR options (rank or average) in the male, female, and combined summaries, shown later. Generally, high school rank was the more popular measure of HSR, and most colleges preferred transcript to SDQ data.

Descriptive Statistics on the Samples

SAT-V and SAT-M means and standard deviations for the college included in the validity summary have been summarized in Tables 3 and 4, respectively. Means have been grouped into three categories: those lower than 450, those between 450 and 549, and those 550 or higher. There are no clear trends apparent for males for either SAT score. Rather, mean SAT scores at those colleges electing to conduct validity studies over this period of time, seem to have fluctuated inconsistently from year to year. For females and combined sex groups, there is a fairly clear downward trend in SAT-V means, with increasingly larger percentages of the colleges having mean scores in the lowest score category and fewer with mean scores in the highest category. There is no clear trend in SAT-M scores for either the female or combined sex groups.

Standard deviations have been grouped into categories of smaller than 75, 75 to 84, and 85 or larger. There is a tendency for all three samples to be more heterogeneous in ability as measured by SAT-V or SAT-M in the more recent years.

Summary of Validities

Median validities for the 11 years are presented in Table 5 for males,

females, and combined sexes. These medians are also plotted in Figures 1, 2, and 3. The male and female summaries include data from single-sex colleges, as well as coeducational institutions; the combined summary is based on data from all colleges for which a combined sex study was done, whether or not a separate sex study was performed. The table includes the four correlations of interest: those for SAT-V, SAT-M, HSR, and the combined predictors.

HSR is the best single predictor in each of the years summarized, and the validity of the SAT-V, SAT-M, and HSR combination is substantially higher than that of HSR alone. Validities are lower for males than for females for all predictors. Within the male and female samples, SAT-M validities are very similar to SAT-V validities, but SAT-V validities are generally higher within the combined sex samples. SAT validities for recent years for the combined samples average about .40 for SAT-V, .35 for SAT-M, .50 for HSR, and .58 for the combined predictors.

No clear trends over time were apparent for SAT validities, although for all groups, SAT-V and SAT-M validities for 1973 and 1974 were among the highest observed. There was a general downward trend in the validity of HSR accompanied by a slight downward trend in multiple correlations.

SUMMARIES FOR SAMPLES GROUPED BY MEAN SAT-VERBAL SCORE AND FOR TWO-YEAR COLLEGES

A further examination of the trends in validity coefficients for SAT-V, SAT-M, HSR, and the three predictors combined was undertaken to compare their respective validities across groups of colleges differing in mean verbal SAT scores. Three subgroups of colleges were defined on the following basis:

1. SAT-V mean less than 450
2. SAT-V mean between 450 and 549
3. SAT-V mean greater than or equal to 550

Table 6 gives the median validity coefficients for male, female, and combined sex samples in these three subgroups for 1964-1974.

An examination of the data contained in Table 6 reveals only minor differences in the median validity coefficients across subgroups of colleges differentiated by mean verbal SAT scores. Although the differences are small, there is a fairly consistent ordering of the groups based on median validities. Colleges with SAT-V mean scores in the middle range tend to have the highest median validities. Those with SAT-V means in the low range tend to have somewhat lower median validities, and the median validities are generally lower still for the highest verbal scoring samples.

One explanation of this consistent ordering of validity coefficients across subgroups of colleges differing in SAT-V mean scores would attribute a portion of the differences in validities to differences in homogeneity of the samples grouped by mean verbal score. It is reasonable to expect the groups with higher scores (presumably those in more selective colleges) to have less variance on the predictors. An increase in subgroup homogeneity on a predictor variable generally results in the lowering of the correlation of that predictor with other variables. Examina-

tion of the levels of homogeneity of the three SAT-V subgroups under study reveals the following ordering of subgroups from high to low homogeneity:

	Percentage of colleges with SAT-V standard deviation less than 80 (high homogeneity)
1. SAT-V mean greater than or equal to 550.	65 percent
2. SAT-V mean less than 450.	44 percent
3. SAT-V mean between 450 and 549. .	31 percent

This ordering is directly opposite to that found for the validity coefficients and thus lends support to the hypothesis that differences in homogeneity may account (at least in part) for the observed differences in median validities.

In order to assess the validity of the four predictor variables in community colleges, median validity coefficients were computed for the time period 1964-74 for the male, female, and combined sex samples in those community colleges participating in VSS and meeting the study selection criteria described in Part 1 of this paper. It should be noted that the respective number of colleges in the male, female, and combined sex samples for community colleges is relatively small, a factor that should be taken into account in the interpretation of the results. It should also be noted that those community colleges participating in the Validity Study Service cannot be assumed to be representative of community colleges generally. Table 7 gives the median validity coefficients for community college samples and the comparable total sample median validity coefficients. All of the community college median coefficients are lower than the corresponding total sample medians, suggesting that these variables are somewhat less valid predictors of college grade point average in two-year colleges than in four-year colleges. However, despite the consistent differences, this generalization should be considered tentative in view of the cautions about sample size and representativeness expressed above.

Table 1. Number of Colleges Included in 1974 Validity Summaries by College Board Region, Type of College, and Percent Minority Enrollment[1]

Descriptor	Male summary	Female summary	Combined summary
College Board regions:			
New England	17	17	23
Middle States	21	22	30
Southern	15	18	20
Midwestern	10	10	22
Southwestern	3	3	4
Western	4	5	10
Type of college			
Two-year public	0	0	3
Two-year private	2	2	4
Four-year public	32	37	61
Four-year private	36	36	40
Percent minority enrollment			
0 - 4	39	41	59
5 - 9	20	22	28
10 - 19	9	10	16
20 - 29	2	2	4
45	0	0	1
99	0	0	1

1. One college could not be located on the Marketing Management File, one college had invalid data for the type of college, and minority enrollment was unavailable for 19 colleges.

Table 2. Types of High School Record Used by Colleges Included in Validity Summary

Type of high school record	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Male summary											
College rep. average.	8	6	9	14	11	11	35	8	18	12	17
Student rep. average[1]. . .								1	9	5	5
College rep. rank	50	55	59	80	38	47	106	39	49	34	44
Student rep. rank[1]									2	7	4
Female summary											
College rep. average.	8	10	14	20	12	14	42	11	17	13	20
Student rep. average[1]. . .								1	9	3	4
College rep. rank	49	60	76	81	37	59	112	39	55	42	48
Student rep. rank[1]									3	7	3
Combined summary											
College rep. average.	12	15	17	11	7	9	27	7	25	26	30
Student rep. average[1]. . .									11	6	12
College rep. rank	50	65	59	51	34	36	102	25	62	52	63
Student rep. rank[1]									3	5	5

1. Option available beginning in 1972.

Table 3. SAT-Verbal and Mathematical Means for Colleges Represented in the Male, Female, and Combined Summaries of Validities

Entering year	Percentages of SAT-verbal means that were: lower than 450	450 to 549	550 or higher	Percentages of SAT-mathematical means that were: lower than 450	450 to 549	550 or higher	Number of colleges
Male summary							
1964.	26	62	12	9	59	33	58
1965.	18	69	13	10	62	28	61
1966.	21	57	22	6	47	47	68
1967.	16	66	18	7	48	45	94
1968.	29	55	16	10	51	39	49
1969.	26	66	9	5	66	29	58
1970.	22	65	13	6	55	39	141
1971.	35	54	10	6	58	35	48
1972.	24	60	15	4	56	40	78
1973.	29	62	9	9	50	41	58
1974.	31	53	16	4	56	40	70
Female summary							
1964.	19	54	26	23	61	16	57
1965.	17	56	27	19	61	20	70
1966.	9	62	29	10	68	22	90
1967.	14	67	19	13	70	17	101
1968.	20	63	16	22	59	18	49
1969.	12	71	16	14	71	15	73
1970.	17	64	19	14	68	19	154
1971.	16	63	22	6	73	22	51
1972.	23	62	15	17	63	20	84
1973.	25	65	11	14	74	12	65
1974.	25	57	17	12	65	23	75
Combined summary							
1964.	24	58	18	19	58	23	62
1965.	22	62	15	21	60	19	80
1966.	21	64	14	13	64	22	76
1967.	26	69	5	19	61	19	62
1968.	37	59	5	20	63	17	41
1969.	22	71	7	11	76	13	45
1970.	21	67	12	13	67	19	129
1971.	34	56	9	12	69	19	32
1972.	30	57	13	14	62	24	101
1973.	31	65	3	16	67	17	89
1974.	39	55	6	16	65	18	110

Table 4. SAT-Verbal and Mathematical Standard Deviations for Colleges Represented in the Male, Female, and Combined Summaries of Validities

Entering year	Percentages of SAT-verbal standard deviations that were: smaller than 75	75 to 84	85 or larger	Percentages of SAT-mathematical standard deviations that were: smaller than 75	75 to 84	85 or larger	Number of colleges
Male summary							
1964	26	34	40	22	22	55	58
1965	31	44	25	16	41	43	61
1966	32	50	18	29	37	34	68
1967	36	45	19	34	36	30	94
1968	27	33	41	29	31	41	49
1969	22	40	38	16	36	48	58
1970	23	40	37	20	35	45	141
1971	21	40	40	21	35	44	48
1972	15	36	49	17	36	47	78
1973	21	34	45	19	29	52	58
1974	13	31	56	10	27	63	70
Female summary							
1964	26	28	46	12	37	51	57
1965	29	47	24	24	40	36	70
1966	41	38	21	40	31	29	90
1967	30	37	34	30	31	40	101
1968	31	33	37	33	35	33	49
1969	30	27	42	33	29	38	73
1970	21	35	44	27	34	39	154
1971	24	41	35	31	43	25	51
1972	14	31	55	21	29	50	84
1973	17	37	46	20	42	38	65
1974	7	37	56	11	36	53	75
Combined summary							
1964	23	44	34	18	29	53	62
1965	28	40	32	24	24	52	80
1966	32	42	26	30	33	37	76
1967	19	42	39	18	26	56	62
1968	24	34	41	20	29	51	41
1969	11	36	53	13	29	58	45
1970	12	31	57	16	29	56	129
1971	16	41	44	25	31	44	32
1972	12	25	63	13	30	57	101
1973	7	36	57	10	27	63	89
1974	4	31	65	4	24	73	110

Table 5. Median Validities Obtained Each Year for SAT-Verbal and Mathematical Scores, High School Record, and for the Three Predictors Combined[1]

Entering year[2]	No. of coll.	SAT-V	SAT-M	H.S. Rec.	3 Pred. comb.	No. of coll.	SAT-V	SAT-M	H.S. Rec.	3 Pred. Comb.	No. of coll.	SAT-V	SAT-M	H.S. Rec.	3 Pred. comb.
	Validities for male samples					Validities for female samples					Validities for combined samples[3]				
1964.	58	0.33	0.32	0.52	0.56	57	0.44	0.42	0.57	0.65	62	0.37	0.32	0.55	0.62
1965.	61	0.32	0.31	0.48	0.54	70	0.41	0.38	0.57	0.63	80	0.36	0.29	0.56	0.61
1966.	68	0.29	0.28	0.47	0.52	90	0.38	0.34	0.55	0.61	76	0.33	0.28	0.53	0.57
1967.	94	0.30	0.28	0.45	0.51	101	0.40	0.36	0.55	0.62	62	0.36	0.28	0.52	0.57
1968.	49	0.30	0.29	0.48	0.57	49	0.44	0.40	0.54	0.63	41	0.40	0.33	0.56	0.62
1969.	58	0.28	0.30	0.46	0.52	75	0.38	0.35	0.56	0.61	45	0.39	0.33	0.53	0.59
1970.	141	0.29	0.27	0.43	0.49	154	0.39	0.36	0.52	0.58	129	0.37	0.29	0.49	0.56
1971.	48	0.30	0.26	0.44	0.50	51	0.37	0.39	0.47	0.55	32	0.34	0.28	0.48	0.53
1972.	78	0.30	0.32	0.45	0.52	84	0.40	0.41	0.50	0.59	101	0.35	0.33	0.50	0.57
1973.	58	0.35	0.36	0.44	0.54	65	0.40	0.40	0.47	0.55	89	0.38	0.36	0.50	0.56
1974.	70	0.35	0.37	0.44	0.52	75	0.40	0.42	0.47	0.57	110	0.42	0.39	0.50	0.58

1. Data for a total of 13 colleges were excluded because of data verification problems.
2. Refers to fall of freshman year.
3. Combined samples are from colleges that analyzed combined sex data regardless of whether or not separate sex data were analyzed.

Table 6. Median Validity Coefficients for Groups Classified by Verbal Ability and by Sex, 1964-1974

SAT-V mean range	Male	Female	Combined sex
SAT-Verbal validity coefficients			
Less than 450	.29	.39	.37
450 to 549	.32	.41	.38
550 and greater	.29	.33	.33
Total sample	.31	.40	.37
SAT-Math validity coefficients			
Less than 450	.31	.41	.34
450 to 549	.31	.40	.33
550 and greater	.26	.30	.26
Total sample	.30	.38	.32
High school record validity coefficients			
Less than 450	.43	.52	.50
450 to 549	.48	.54	.53
550 and greater	.43	.43	.45
Total sample	.46	.53	.52
Three predictors combined validity coefficients			
Less than 450	.50	.59	.58
450 to 549	.54	.62	.59
550 and greater	.48	.53	.52
Total sample	.52	.60	.58
Number of colleges			
Less than 450	189	152	229
450 to 549	482	545	514
550 and greater	112	172	84
Total sample	783	869	827

Table 7. Community College and Total Sample
Median Validity Coefficients, 1964-1974

Community college sample

Predictor variables	Male	Female	Combined sex
SAT-Verbal	.26	.37	.32
SAT-Math	.26	.34	.30
High school record	.32	.47	.48
Three predictors combined	.40	.56	.53
Number of colleges	31	36	45

Total sample

SAT-Verbal	.31	.40	.37
SAT-Math	.30	.38	.32
High school record	.46	.53	.52
Three predictors combined	.52	.60	.58
Number of colleges	783	869	827

Figure 1. Male Sample Median Validity Trends 1964-1974

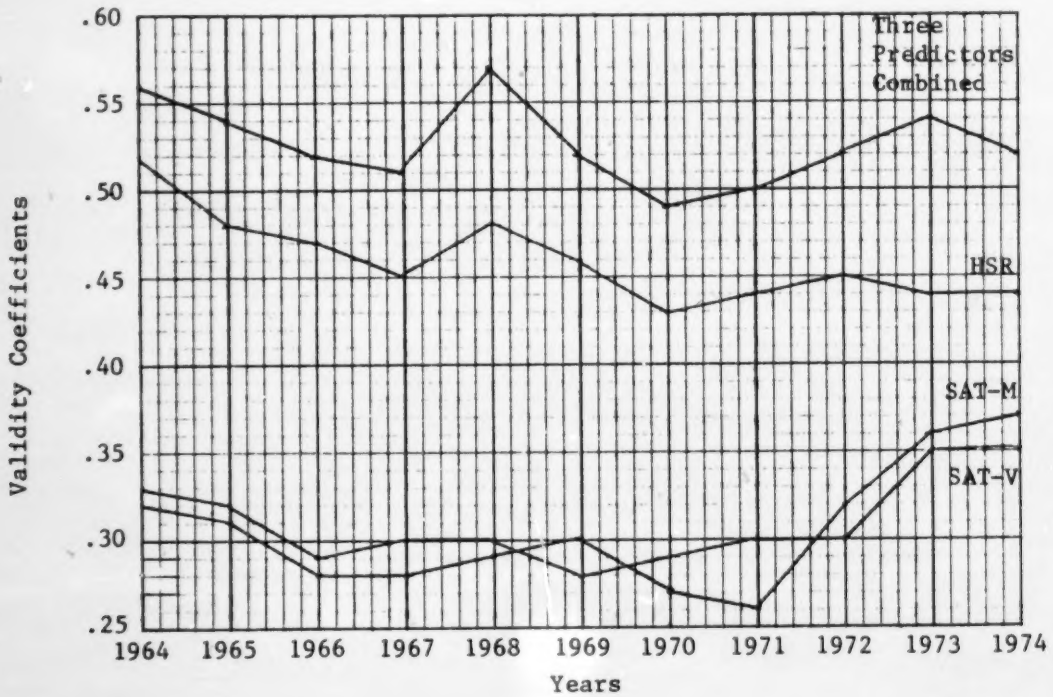

Figure 2. Female Sample Median Validity Trends 1964-1974

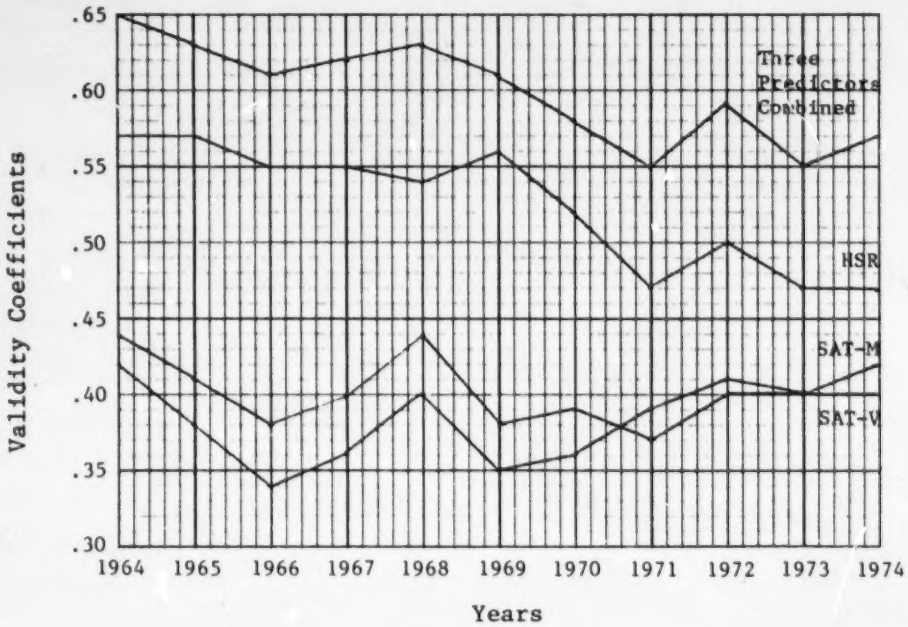

Figure 3. Combined Sex Sample Median Validity Trends 1964-1974